AF/2875

OBLON
SPIVAK
McCLELLAND
MAIER
&
NEUSTADT
P.C.

ATTORNEYS AT LAW

NORMAN F. OBLON
(703) 413-3000
NOBLON@OBLON.COM

HARRIS A. PITLICK
(703) 413-3000
HPITLICK@OBLON.COM
*BAR OTHER THAN VIRGINIA

Docket No.: 198538US0

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

RE: Application Serial No.: 09/691,032
Applicants: Takeshi TAKEZAWA
Filing Date: OCTOBER 19, 2000
For: LIGHT SOURCE DEVICE AND PROJECTOR UTILIZING THE SAME
Group Art Unit: 2875
Examiner: ALAVI, A.

SIR:

Attached hereto for filing are the following papers:

Appeal Brief w/Attached Appendix (in triplicate)

Our check in the amount of $320.00 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Norman F. Oblon
Attorney of Record
Registration No. 24,618

Harris A. Pitlick
Registration No. 38,779

#12/Appeal Brief 4/24/03 C.D.

198538US-0

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:
TAKESHI TAKEZAWA	: EXAMINER: ALAVI, A.
SERIAL NO: 09/691,032	:
FILED: OCTOBER 19, 2000	: GROUP ART UNIT: 2875

FOR: LIGHT SOURCE DEVICE AND PROJECTOR UTILIZING THE SAME

APPEAL BRIEF

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

This is an appeal of the Final Rejection dated September 11, 2002, of Claims 1-3. A Notice of Appeal, along with a petition for a two-month extension of time, was timely filed on February 11, 2003.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Seiko Epson Corporation having an address at 4-1, Nishi-Shinjuku 2-chome, Shinjuku-ku, Tokyo, Japan.

II. RELATED APPEALS AND INTERFERENCES

Appellant, Appellant's legal representative and the assignee are aware of no appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF THE CLAIMS

Claims 1-31, all the claims in the application, stand rejected and are herein appealed.

IV. STATUS OF THE AMENDMENTS

No amendment under 37 CFR 1.116 has been filed.

V. SUMMARY OF THE INVENTION

As recited in Claim 1, the claimed invention is a light source device, comprising a light source lamp; and a reflector that reflects light emitted from the light source lamp,

wherein the reflector is formed of a ceramic having a thermal conductivity of at least about 0.005 (cal/cm·sec·deg) at a temperature of 20°C.

The claimed invention is also, as recited in Claim 7, a projector, comprising an illuminating optical system including the above light source device; an electrooptic device that modulates light emitted from the illuminating optical system in response to image information; and a projection optical system that projects a modulated light obtained by the electrooptic device.

See the specification at page 2, lines 12-16 and page 3, lines 18-23.

VI. ISSUES

Whether Claims 1-31 are anticipated under 35 U.S.C. § 102(b) over U.S. Patent No. 5,621,267 (Shaffner et al)?

VII. GROUPING OF THE CLAIMS

Claims 4-6 stand or fall together with Claim 1. Claims 10-13 stand or fall together with Claim 7. The remaining claims stand or fall separately from Claim 1.

VIII. ARGUMENT

Claims 1-31 stand rejected under 35 U.S.C. § 102(b) as anticipated by Shaffner et al. That rejection is untenable and should not be sustained. As shown by the Kyocera data sheet and English translation thereof (3 total pages) of record, alumina can have various thermal conductivities according to its content (%) and appearance. Porous alumina (e.g., No. A-410 or No. A-432) has a thermal conductivity of 0.004 cal/cm·sec·deg at 20°C. Thus, it is **not** inherent that alumina has a thermal conductivity of at least 0.005 cal/cm·sec·deg at 20°C. As the Examiner notes, Shaffner et al discloses a high-power metal halide reflector lamp wherein the lamp contains a ceramic reflector made of alumina, i.e., Al_2O_3. Shaffner et al discloses a cast reflector (column 3, lines 8-10, Fig. 3 and column 3, lines 56-58). The cast reflector has a rough inside surface (column 3, lines 10-15) and is almost completely comprised of alumina. Thus, it is respectfully submitted that this reflector, like above No. A-410, is formed of porous alumina having a relatively small thermal conductivity, i.e., less than 0.005 cal/cm·sec·deg at 20°C. Nor

would it have been obvious, without the present disclosure as a guide, to use an alumina in Shaffner et al meeting the presently-recited thermal conductivity limitation.

In the Final Office Action, the Examiner continues to assert that Shaffner et al inherently meets the terms of the present claims (including those reciting materials other than alumina), and cites pages from the CRC Handbook of Chemistry and Physics to the effect that "the thermal property of chemical substances which are well established and are known."

In reply, Appellant has demonstrated above that Shaffner et al does **not** inherently meet the terms of any of the present claims. Moreover, the fact that some physical properties of known materials are listed in a handbook, or that some known materials meet the thermal conductivity limitation of the present claims, is irrelevant. The prior art neither discloses nor suggests a light source and projector of the type claimed herein, wherein the reflector is formed of a ceramic having a thermal conductivity of at least about 0.005 (cal/cm·sec·deg) at a temperature of 20°C, or formed of a ceramic material which inherently has this thermal conductivity.

Claim 2 is separately patentable, since Shaffner et al does not disclose a light source device in accordance with claim 1, wherein the ceramic has a thermal conductivity of at least about 0.004 (cal/cm·sec·deg) in a temperature range of about 0 to about 200°C.

Claim 3 is separately patentable, since Shaffner et al does not disclose a light source device in accordance with claim 2, wherein the ceramic is composed of any material selected from the group consisting of Al_2O_3, $2MgO{\cdot}SiO_2$, $MgO{\cdot}SiO_2$, $ZrO_2{\cdot}SiO_2$, TiO_2, SiC, Si_3N_4, ZrO_2, and cermet.

Claim 7 is separately patentable, since Shaffner et al does not disclose a projector, comprising an illuminating optical system including a light source device; an electrooptic device that modulates light emitted from the illuminating optical system in response to image information; and a projection optical system that projects a modulated light obtained by the electrooptic device, the light source device comprising:

a light source lamp; and

a reflector that reflects light emitted from the light source lamp, wherein the reflector is formed of a ceramic having a thermal conductivity of at least about 0.005 (cal/cm·sec·deg) at a temperature of 20°C.

Claim 8 is separately patentable, since Shaffner et al does not disclose a projector in accordance with claim 7, wherein the ceramic has a thermal conductivity of at least about 0.004 (cal/cm·sec·deg) in a temperature range of about 0 to about 200°C.

Claim 9 is separately patentable, since Shaffner et al does not disclose a projector in accordance with claim 8, wherein the ceramic is composed of any material selected from the group consisting of Al_2O_3, $2MgO{\cdot}SiO_2$, $MgO{\cdot}SiO_2$, $ZrO_2{\cdot}SiO_2$, TiO_2, SiC, Si_3N_4, ZrO_2, and cermet.

Claim 14 is separately patentable, since Shaffner et al does not disclose a light source device in accordance with claim 3, wherein the material is Al_2O_3.

Claim 15 is separately patentable, since Shaffner et al does not disclose a light source device in accordance with claim 3, wherein the material is $2MgO{\cdot}SiO_2$.

Claim 16 is separately patentable, since Shaffner et al does not disclose a light source device in accordance with claim 3, wherein the material is $MgO{\cdot}SiO_2$.

Claim 17 is separately patentable, since Shaffner et al does not disclose a light source device in accordance with claim 3, wherein the material is $ZrO_2 \cdot SiO_2$.

Claim 18 is separately patentable, since Shaffner et al does not disclose a light source device in accordance with claim 3, wherein the material is TiO_2.

Claim 19 is separately patentable, since Shaffner et al does not disclose a light source device in accordance with claim 3, wherein the material is SiC.

Claim 20 is separately patentable, since Shaffner et al does not disclose a light source device in accordance with claim 3, wherein the material is Si_3N_4.

Claim 21 is separately patentable, since Shaffner et al does not disclose a light source device in accordance with claim 3, wherein the material is ZrO_2.

Claim 22 is separately patentable, since Shaffner et al does not disclose a light source device in accordance with claim 3, wherein the material is cermet.

Claim 23 is separately patentable, since Shaffner et al does not disclose a projector in accordance with claim 9, wherein the material is Al_2O_3.

Claim 24 is separately patentable, since Shaffner et al does not disclose a projector in accordance with claim 9, wherein the material is $2MgO \cdot SiO_2$.

Claim 25 is separately patentable, since Shaffner et al does not disclose a projector in accordance with claim 9, wherein the material is $MgO \cdot SiO_2$.

Claim 26 is separately patentable, since Shaffner et al does not disclose a projector in accordance with claim 9, wherein the material is $ZrO_2 \cdot SiO_2$.

Claim 27 is separately patentable, since Shaffner et al does not disclose a projector in accordance with claim 9, wherein the material is TiO_2.

Claim 28 is separately patentable, since Shaffner et al does not disclose a projector in accordance with claim 9, wherein the material is SiC.

Claim 29 is separately patentable, since Shaffner et al does not disclose a projector in accordance with claim 9, wherein the material is Si_3N_4.

Claim 30 is separately patentable, since Shaffner et al does not disclose a projector in accordance with claim 9, wherein the material is ZrO_2.

Claim 31 is separately patentable, since Shaffner et al does not disclose a projector in accordance with claim 9, wherein the material is cermet.

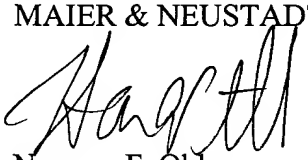
Accordingly, it is respectfully requested that this rejection be REVERSED.

IX. CONCLUSION

For the above reasons, it is respectfully requested that all the rejections still pending in the Final Office Action be REVERSED.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Norman F. Oblon
Attorney of Record
Registration No. 24,618

Harris A. Pitlick
Registration No. 38,779

22850
Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 11/98)

APPENDIX

CLAIMS ON APPEAL

1. A light source device, comprising:

a light source lamp; and

a reflector that reflects light emitted from the light source lamp, wherein the reflector is formed of a ceramic having a thermal conductivity of at least about 0.005 (cal/cm·sec·deg) at a temperature of 20°C.

2. A light source device in accordance with claim 1, wherein the ceramic has a thermal conductivity of at least about 0.004 (cal/cm·sec·deg) in a temperature range of about 0 to about 200°C.

3. (Amended) A light source device in accordance with claim 2, wherein the ceramic is composed of any material selected from the group consisting of Al_2O_3, $2MgO{\cdot}SiO_2$, $MgO{\cdot}SiO_2$, $ZrO_2{\cdot}SiO_2$, TiO_2, SiC, Si_3N_4, ZrO_2, and cermet.

4. A light source device in accordance with claim 1, further comprising:

a transmissive front panel fitted in an opening of the reflector.

5. A light source device in accordance with claim 1, further comprising:

a cooling device that forcibly cools down the reflector.

6. A light source device in accordance with claim 1, further comprising:

a power source that activates the light source lamp.

7. A projector, comprising:

an illuminating optical system including a light source device;

an electrooptic device that modulates light emitted from the illuminating optical system in response to image information; and

a projection optical system that projects a modulated light obtained by the electrooptic device,

the light source device comprising:

a light source lamp; and

a reflector that reflects light emitted from the light source lamp, wherein the reflector is formed of a ceramic having a thermal conductivity of at least about 0.005 (cal/cm·sec·deg) at a temperature of 20°C.

8. A projector in accordance with claim 7, wherein the ceramic has a thermal conductivity of at least about 0.004 (cal/cm·sec·deg) in a temperature range of about 0 to about 200°C.

9. (Amended) A projector in accordance with claim 8, wherein the ceramic is composed of any material selected from the group consisting of Al_2O_3, $2MgO{\cdot}SiO_2$, $MgO{\cdot}SiO_2$, $ZrO_2{\cdot}SiO_2$, TiO_2, SiC, Si_3N_4, ZrO_2, and cermet.

10. A projector in accordance with claim 7, further comprising:

a transmissive front panel fitted in an opening of the reflector.

11. A projector in accordance with claim 7, further comprising:

a cooling device that forcibly cools down the reflector.

12. A projector in accordance with claim 7, further comprising:

a power source that activates the light source lamp.

13. A projector in accordance with claim 7, further comprising:

a driving section that supplies the image information to drive the electrooptic device.

14. A light source device in accordance with claim 3, wherein the material is Al_2O_3.

15. A light source device in accordance with claim 3, wherein the material is $2MgO{\cdot}SiO_2$.

16. A light source device in accordance with claim 3, wherein the material is $MgO{\cdot}SiO_2$.

17. A light source device in accordance with claim 3, wherein the material is $ZrO_2{\cdot}SiO_2$.

18. A light source device in accordance with claim 3, wherein the material is TiO_2.

19. A light source device in accordance with claim 3, wherein the material is SiC.

20. A light source device in accordance with claim 3, wherein the material is Si_3N_4.

21. A light source device in accordance with claim 3, wherein the material is ZrO_2.

22. A light source device in accordance with claim 3, wherein the material is cermet.

23. A projector in accordance with claim 9, wherein the material is Al_2O_3.

24. A projector in accordance with claim 9, wherein the material is $2MgO{\cdot}SiO_2$.

25. A projector in accordance with claim 9, wherein the material is $MgO{\cdot}SiO_2$.

26. A projector in accordance with claim 9, wherein the material is $ZrO_2{\cdot}SiO_2$.

27. A projector in accordance with claim 9, wherein the material is TiO_2.

28. A projector in accordance with claim 9, wherein the material is SiC.

29. A projector in accordance with claim 9, wherein the material is Si_3N_4.

30. A projector in accordance with claim 9, wherein the material is ZrO_2.

31. A projector in accordance with claim 9, wherein the material is cermet.